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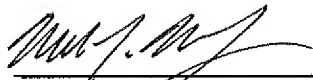
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in the following listed application(s) or patent(s) for which the issue fee has been paid.

<u>Patent No.</u>	<u>Serial No.</u>	<u>Patent Date</u>	<u>US Filing Date</u>	<u>Confirmation No.</u>	<u>Attorney Docket No.</u>
7,598,670B2	10/593,193	10/06/09	05/17/2005	9919	0553-0518

Respectfully Submitted,



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(12) **United States Patent**
Kumaki et al.

(10) **Patent No.:** US 7,598,670 B2
(45) **Date of Patent:** Oct. 6, 2009

(54) **LIGHT EMITTING ELEMENT AND LIGHT EMITTING DEVICE**

6,831,406 B1 12/2004 Fukuyama et al.
6,872,472 B2 3/2005 Liao et al.

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(Continued)

(73) **Assignee:** Semiconductor Energy Laboratory Co., Ltd. (JP)

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(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 267 days.

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(21) **Appl. No.:** 10/593,193

OTHER PUBLICATIONS

(22) **PCT Filed:** May 17, 2005

(86) **PCT No.:** PCT/JP2005/009313

Ganzorig, C. et al, "Improved drive voltages of organic electroluminescent devices with an efficient p-type aromatic diamine hole-injection layer," Applied Physics Letters, vol. 77, No. 25, pp. 4211-4213, (Dec. 18, 2000).

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(2), (4) **Date:** Sep. 15, 2006

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(65) **Prior Publication Data**

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(57) **ABSTRACT**

(51) **Int. Cl.**
H01J 63/04 (2006.01)

(52) **U.S. Cl.** 313/506; 428/690; 428/917

(58) **Field of Classification Search** 313/500-512;
428/690, 917

See application file for complete search history.

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A light emitting element of the invention includes n pieces of light emitting layers (n is a natural number) between first and second electrodes. A first layer and a second layer are provided between the mth light emitting layer (m is a natural number of 1 ≤ m ≤ n) and the m+1th light emitting layer. The first and second layers are contacted to each other. The first layer contains a substance that transports holes easily and a substance with an electron accepting property. The second layer contains a substance that transports electrons easily and a substance with an electron donating property. Molybdenum oxide is used as the substance with the electron accepting property.

12 Claims, 11 Drawing Sheets

